



Currently pending claims of your application

1 1. A method of establishing a network resources reservation for an anticipated traffic flow
2 along a path in a network between an anticipated source and an anticipated receiver of the
3 traffic flow, wherein the anticipated receiver otherwise cannot facilitate establishing the
4 network resources reservation, the method comprising the steps of:
5 storing, at the proxy node, policy information defining whether the proxy node should
6 initiate network resources reservations for particular traffic flows;
7 detecting a first RSVP Path message associated with the anticipated receiver of the
8 anticipated traffic flow at a router, acting as a proxy node, located within the path;
9 determining, at the proxy node and based on the policy information stored at the proxy
10 node and without receiving the policy information from a policy server residing
11 on the network, whether to establish the network resources reservation;
12 generating, at the proxy node, an RESV message to reserve network resources for the
13 anticipated traffic flow;
14 communicating the RESV message to the anticipated source of the anticipated traffic
15 flow;
16 wherein the step of determining, at the proxy node, whether to establish the network
17 resources reservation includes the steps of:
18 determining one or more network parameter values associated with the anticipated
19 traffic flow;
20 determining one or more transport parameter values associated with the
21 anticipated traffic flow;
22 determining next and previous hop parameter values associated with the
23 anticipated traffic flow; and
24 correlating at least one of the ascertained network parameter, transport parameter,
25 next hop parameter, and previous hop parameter values with information
26 defining a relationship between them and whether a RESV message is
27 desired.

- 1 2. A method as recited in claim 1, further comprising the step of determining one or more
2 device and traffic parameter values associated with the anticipated traffic flow, and
3 wherein the step of generating the RESV message comprises the step of generating the
4 RESV message based on at least one of the device and traffic parameter values.
- 1 3. (Cancelled).
- 1 4. A method as recited in claim 1, further comprising the step of, concurrently with the
2 generating and communicating steps, forwarding a second RSVP Path message to one or
3 more devices that are along the anticipated path and that are between the proxy node and
4 the anticipated receiver, wherein the second RSVP Path message defines a different set of
5 traffic characteristics for the flow initiated by the sender than the first RSVP message.
- 1 5. A method as recited in claim 1, wherein determining the network parameter values and
2 ascertaining the transport parameter values includes the steps of determining at least one
3 of the source and receiver IP addresses, source and receiver port numbers, and transport
4 protocol based on values carried in objects in the first RSVP Path message.
- 1 6. A method as recited in claim 1, wherein determining the anticipated traffic flow
2 characteristics includes determining at least one of the rate and size of packets associated
3 with the anticipated traffic flow.
- 1 7. A method as recited in claim 1, further comprising the steps of extracting one or more
2 additional anticipated traffic flow attributes from the first RSVP Path message.
- 1 8. A method as recited in claim 7, wherein the anticipated receiver is an IP phone, and
2 further comprising the step of determining at least one quality of service parameter
3 associated with the anticipated traffic flow.

1 9. (Canceled)

1 10. A method as recited in claim 1, wherein the step of detecting an RSVP Path message
2 comprises the step of detecting the first RSVP Path message associated with the
3 anticipated receiver of the anticipated traffic flow at a proxy node that is logically
4 positioned adjacent to the path.

1 11. A computer readable medium comprising one or more sequences of instructions for
2 facilitating an RSVP reservation process, for an anticipated traffic flow anticipated to be
3 received by an anticipated receiver that cannot facilitate an RSVP reservation process for
4 the anticipated traffic flow, wherein when the instructions are executed by one or more
5 processors, the instructions cause the one or more processors to carry out the steps of:
6 storing, at the proxy node, policy information defining whether the proxy node should
7 initiate network resources reservations for particular traffic flows;
8 detecting a first RSVP Path message associated with the anticipated receiver of the
9 anticipated traffic flow at a router, acting as a proxy node, located within the path;
10 determining, at the proxy node and based on the policy information stored at the proxy
11 node and without receiving the policy information from a policy server residing
12 on the network, whether to establish the network resources reservation;
13 generating, at the proxy node, an RESV message to reserve network resources for the
14 anticipated traffic flow;
15 communicating the RESV message to the anticipated source of the anticipated traffic
16 flow;
17 wherein the step of determining, at the proxy node, whether to establish the network
18 resources reservation includes the steps of:
19 determining one or more network parameter values associated with the anticipated
20 traffic flow;
21 determining one or more transport parameter values associated with the
22 anticipated traffic flow;

23 determining next and previous hop parameter values associated with the
24 anticipated traffic flow; and
25 correlating at least one of the ascertained network parameter, transport parameter,
26 next hop parameter, and previous hop parameter values with information
27 defining a relationship between them and whether a RESV message is
28 desired.

1 12. A computer-readable medium as recited in claim 11, further comprising the step of
2 determining one or more device and traffic parameter values associated with the
3 anticipated traffic flow, and wherein the step of generating the RESV message comprises
4 the step of generating the RESV message based on at least one of the device and traffic
5 parameter values.

1 13. (Cancelled).

1 14. A computer-readable medium as recited in claim 11,
2 further comprising the steps of, concurrently with the generating and communicating
3 steps, forwarding a second RSVP Path message to one or more devices that are
4 along the anticipated path and that are between the proxy node and the anticipated
5 receiver, wherein the second RSVP Path message defines a different set of traffic
6 characteristics for the flow initiated by the sender than the first RSVP message.

1 15. A computer-readable medium as recited in claim 11, wherein determining the network
2 parameter values and ascertaining the transport parameter values includes the steps of
3 determining at least one of the source and receiver IP addresses, source and receiver port
4 numbers, and transport protocol based on values carried in objects in the first RSVP Path
5 message.

1 16. A computer-readable medium as recited in claim 11, wherein determining the anticipated
2 traffic flow characteristics includes determining at least one of the rate and size of packets
3 associated with the anticipated traffic flow.

- 1 17. A computer-readable medium as recited in claim 11, further comprising the steps of
2 extracting one or more additional anticipated traffic flow attributes from the first RSVP
3 Path message.
- 1 18. A computer-readable medium as recited in claim 17, wherein the anticipated receiver is
2 an IP phone, and further comprising the step of determining at least one quality of service
3 parameter associated with the anticipated traffic flow.
- 1 19. (Canceled)
- 1 20. A computer-readable medium as recited in claim 11, wherein the step of detecting an
2 RSVP Path message comprises the step of detecting the first RSVP Path message
3 associated with the anticipated receiver of the anticipated traffic flow at a proxy node that
4 is logically positioned adjacent to the path.
- 1 21. A system for establishing a network resources reservation for an anticipated traffic flow
2 along a path in a network between an anticipated source and an anticipated receiver of the
3 traffic flow, wherein the anticipated receiver otherwise cannot facilitate establishing the
4 network resources reservation, the system comprising:
5 means for storing, at the proxy node, policy information defining whether the proxy node
6 should initiate network resources reservations for particular traffic flows;
7 means for detecting a first RSVP Path message associated with the anticipated receiver of
8 the anticipated traffic flow at a router, acting as a proxy node, located within the
9 path;
10 means for determining, at the proxy node and based on the policy information stored at
11 the proxy node and without receiving the policy information from a policy server
12 residing on the network, whether to establish the network resources reservation;
13 means for generating, at the proxy node, an RESV message to reserve network resources
14 for the anticipated traffic flow;

means for communicating the RESV message to the anticipated source of the anticipated traffic flow; and
wherein the means for determining, at the proxy node, whether to establish the network resources reservation includes:
means for determining one or more network parameter values associated with the anticipated traffic flow;
means for determining one or more transport parameter values associated with the anticipated traffic flow;
means for determining next and previous hop parameter values associated with the anticipated traffic flow; and
means for correlating at least one of the ascertained network parameter, transport parameter, next hop parameter, and previous hop parameter values with information defining a relationship between them and whether a RESV message is desired.

22. A network device that can establish a network resources reservation for an anticipated traffic flow along a path in a network between an anticipated source and an anticipated receiver of the traffic flow, wherein the anticipated receiver otherwise cannot facilitate establishing the network resources reservation, the network device comprising:
a network interface;
a processor coupled to the network interface and receiving network messages from the network through the network interface;
a computer-readable medium comprising one or more stored sequences which, when executed by the processor, cause the processor to carry out the steps of:
storing, at the proxy node, policy information defining whether the proxy node should initiate network resources reservations for particular traffic flows;
detecting a first RSVP Path message associated with the anticipated receiver of the anticipated traffic flow at a router, acting as a proxy node, located within the path;
determining, at the proxy node and based on the policy information stored at the proxy node and without receiving the policy information from a policy

17 server residing on the network, whether to establish the network resources
18 reservation;
19 generating, at the proxy node, an RESV message to reserve network resources for
20 the anticipated traffic flow;
21 communicating the RESV message to the anticipated source of the anticipated
22 traffic flow; and
23 wherein the step of determining, at the proxy node, whether to establish the
24 network resources reservation comprises the steps of:
25 determining one or more network parameter values associated with the anticipated
26 traffic flow;
27 determining one or more transport parameter values associated with the
28 anticipated traffic flow;
29 determining next and previous hop parameter values associated with the
30 anticipated traffic flow; and
31 correlating at least one of the ascertained network parameter, transport parameter,
32 next hop parameter, and previous hop parameter values with information
33 defining a relationship between them and whether a RESV message is
34 desired.

1 23. A system as recited in claim 21, further comprising means for determining one or more
2 device and traffic parameter values associated with the anticipated traffic flow, and
3 wherein the means for generating the RESV message comprises means for generating the
4 RESV message based on at least one of the device and traffic parameter values.

1 24. (Cancelled).

1 25. A system as recited in claim 21,
2 further comprising means for forwarding, concurrently with operation of the means for
3 generating and the means for communicating, a second RSVP Path message to
4 one or more devices that are along the anticipated path and that are between the
5 proxy node and the anticipated receiver, wherein the second RSVP Path message

6 defines a different set of traffic characteristics for the flow initiated by the sender
7 than the first RSVP message.

1 26. A system as recited in claim 24, wherein the means for determining the network
2 parameter values and ascertaining the transport parameter values includes means for
3 determining at least one of the source and receiver IP addresses, source and receiver port
4 numbers, and transport protocol based on values carried in objects in the first RSVP Path
5 message.

1 27. A system as recited in claim 24, wherein the means for determining the anticipated traffic
2 flow characteristics includes means for determining at least one of the rate and size of
3 packets associated with the anticipated traffic flow.

1 28. A system as recited in claim 24, further comprising means for extracting one or more
2 additional anticipated traffic flow attributes from the first RSVP Path message.

1 29. A system as recited in claim 27, wherein the anticipated receiver is an IP phone, and
2 further comprising means for determining at least one quality of service parameter
3 associated with the anticipated traffic flow.

1 30. A system as recited in claim 21, wherein the means for detecting an RSVP Path message
2 comprises means for detecting a first RSVP Path message associated with the anticipated
3 receiver of the anticipated traffic flow at a proxy node that is logically positioned adjacent
4 to the path.

1 31. A network device as recited in claim 22, wherein the one or more stored sequences, when
2 executed by the processor, cause the processor to further carry out the step of determining
3 one or more device and traffic parameter values associated with the anticipated traffic
4 flow, and wherein the step of generating the RESV message comprises the step of

5 generating the RESV message based on at least one of the device and traffic parameter
6 values.

1 32. (Cancelled).

1 33. A network device as recited in claim 22,
2 further comprising instructions for performing the step of, concurrently with the
3 generating and communicating steps, forwarding a second RSVP Path message to
4 one or more devices that are along the anticipated path and that are between the
5 proxy node and the anticipated receiver, wherein the second RSVP Path message
6 defines a different set of traffic characteristics for the flow initiated by the sender
7 than the first RSVP message.

1 34. A network device as recited in claim 22, wherein determining the network parameter
2 values and ascertaining the transport parameter values includes the steps of determining at
3 least one of the source and receiver IP addresses, source and receiver port numbers, and
4 transport protocol based on values carried in objects in the first RSVP Path message.

1 35. A network device as recited in claim 22, wherein determining the anticipated traffic flow
2 characteristics includes determining at least one of the rate and size of packets associated
3 with the anticipated traffic flow.

1 36. A network device as recited in claim 22, wherein the one or more stored sequences, when
2 executed by the processor, cause the processor to further carry out the step of extracting
3 one or more additional anticipated traffic flow attributes from the RSVP Path message.

1 37. A network device as recited in claim 36, wherein the anticipated receiver is an IP phone,
2 and wherein the one or more stored sequences, when executed by the processor, cause the
3 processor to further carry out the step of determining at least one quality of service
4 parameter associated with the anticipated traffic flow.

- 1 38. A network device as recited in claim 22, wherein the step of detecting an RSVP Path
- 2 message comprises the step of detecting the first RSVP Path message associated with the
- 3 anticipated receiver of the anticipated traffic flow at a proxy node that is logically
- 4 positioned adjacent to the path.